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Macrofungi Determined in Ereğli (Konya) District

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Abstract: This study was carried out on macrofungi samples collected from Ereğli district of Konya between 2017 and 2019. Eighty nine species, belonging to 74 genera, 41 families, 13 orders and 7 classes within Ascomycota and Basidiomycota were determined. The list of the taxa is presented together with their habitats and localities. *Tulostoma niveum* is reported as new record for the mycobiota of Turkey and presented with a short description and photographs.

Key words: Biodiversity, macrofungi, taxonomy, Turkey

Ereğli (Konya) Yöresinde Belirlenen Makromantarlar

Öz: Bu çalışma Ereğli (Konya) yöresinden 2017 ve 2019 yılları arasında toplanan örnekler üzerinde gerçekleştirilmiştir. Ascomycota ve Basidiomycota bölümleri içinde yer alan 7 sınıf, 13 takım, 41 familya ve 74 cinse ait 89 tür belirlenmiştir. Türlerin listesi habitat ve lokaliteleri ile birlikte verilmiştir. *Tulostoma niveum* Türkiye mikobiyotası için yeni kayıt olarak rapor edilmiş ve kısa betimlemesi ve fotoğraflarıyla verilmiştir.

Anahtar kelimeler: Biyoçeşitlilik, makromantarlar, taksonomi, Türkiye

Introduction

Ereğli is a district of Konya located in Central Anatolian Region of Turkey. The research area is situated between 37°21'-38°01' north latitudes and 33°45'-34°23' east longitudes and takes place in C4 according to Davis' grid square system (Figure 1). According to Emberger's formula (Akman, 1999), the area has a Mediterranean climate. The annual precipitation is 317.7 mm, and the average temperature is 11.7 °C.

Though steppe vegetation is the dominant vegetation in the region, some naturally growing and planted *Pinus nigra* J.F. Arnold, *Juniperus oxycedrus* Hochst.), and some *Quercus* L. sp. especially of *Quercus pubescens* Szov. ex A.DC and *Quercus cerris* DC. populations are localized at higher portions of the region. *Salix* L. and *Populus* L. species are also distributed along streamsides.

In a conference paper presented in 14th National Biological Congress, Kaşık and Öztürk (1998) reported 22 macrofungi species from the region. But a detailed

research related to macrofungal biodiversity of Ereğli district haven't been conducted.

The work aims to determine the macrofungal composition of the Ereğli region and make a contribution to the mycobiota of Konya and Turkey.

Material and method

The macrofungi samples were collected between 2017 and 2019 from the region within the boundaries of Ereğli district of Konya (Figure 1). The fruit bodies were photographed at their natural habitats and required ecological characters were noted. Investigations related macroscopy and microscopy of the samples were carried out in the fungarium. Microscopic investigations were performed under a Nikon Eclipse Ci-S trinocular microscope. The samples were identified with the help of Watling (1973), Kers (1978), Phillips (1981), Moser (1983), Breitenbach and Kränzlin (1984, 1986, 1991, 1995, 2000), Miller and Miller (1988), Ellis and Ellis (1990), Buczacki (1992), Hansen and Knudsen (1992,



1997), Jordan (1995), Pegler et al. (1995), Bessette et al. (1997, 2007), Medardi (2006), Hausknecht (2009), Antonin and Noordeloos (2010), Thompson (2013) and Beug et al. (2014).

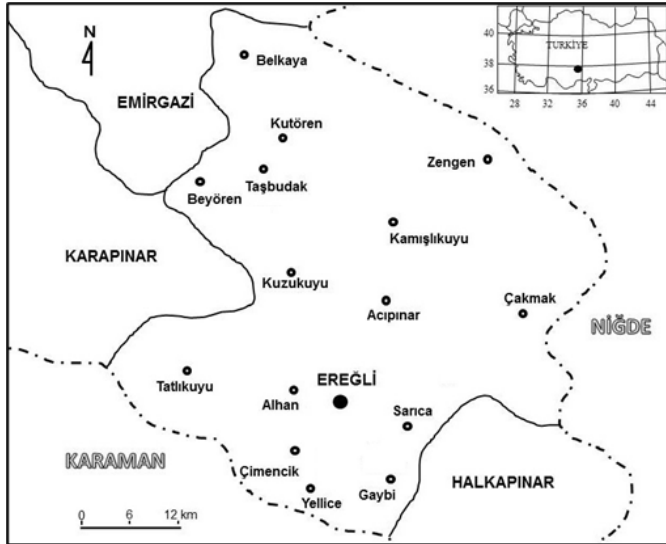


Figure 1. Map of the research area

The specimens are kept at Karamanoğlu Mehmetbey University, Kamil Özdağ Science Faculty, Department of Biology.

Results

Eighty nine macromycete taxa were determined from the research area. The taxa are listed in alphabetical order, considering the taxonomic categories from division to species. Kirk et al., (2008) and Index Fungorum (accessed on 15 June 2021) was followed for the systematics of the taxa.

Fungi R.T. Moore

Ascomycota Caval.-Sm.

Dothideomycetes O.E. Erikss. & Winka

Patellariales D. Hawksw. & O.E. Erikss.

Patellariaceae Corda

Patellaria Fr.

1. Patellaria atrata (Hedw.) Fr.: Beleağaç village, on decaying stump of *Populus* sp., along streamside, 37°28'N-34°06'E, 1060 m, 06.11.2017, FTÇ-197; Sarıca piknik area, on decaying *Populus* sp. twigs, 37°28'N-34°07'E, 1060 m, 09.12.2017, FTÇ-240.

Pezizomycetes O.E. Erikss. & Winka

Pezizales J. Schröt.

Helvellaceae Fr.

Dissingia K. Hansen, X.H. Wang & T. Schumach.

2. Dissingia leucomelaena (Pers.) K. Hansen & X.H. Wang: Büyükdede village, on soil, among needle litter, 37°24'N-34°07'E, 1360 m, 02.05.2018, FTÇ-365; Gaybi village, on soil, among needle litter, 37°25'N-34°08'E, 1225 m, 17.04.2019, FTÇ-408.

Helvella L.

3. Helvella acetabulum (L.) Quél.: Beyören village, on soil, among leaf litter, 37°48'N-33°52'E, 1490 m, 23.04.2019, FTÇ-410.

4. Helvella atra J. König: Belceağaç village, on soil, among leaf litter, 37°28'N-34°06'E, 1060 m, 26.08.2017, FTÇ-139.

5. Helvella fibrosa (Wallr.) Korf: Beyören village, on soil, among leaf litter under *Quercus* sp., 37°48'N-33°52'E, 1490 m, 23.04.2019, FTÇ-411.

6. Helvella lacunosa Afzel.: Gaybi village, on soil, among leaf litter, under *Populus* sp., 37°25'N-34°08'E, 1220 m, 17.06.2017, FTÇ-52; Yıldızlı village, stream side, on soil, under *Populus* sp., 37°26'N-34°08'E, 1100 m, 01.10.2017, FTÇ-154.

7. Helvella spadicea Schaeff.: Büyükdede village, on soil, under *Populus* sp., 37°25'N-34°07'E, 1350 m, 01.05.2019, FTÇ-420.

Morchellaceae Rchb.

Morchella Dill. ex Pers.

8. Morchella elata Fr.: Gaybi village, on soil, among needle litter, under *Pinus* sp., 37°25'N-34°08'E, 1190 m, 14.03.2018, FTÇ-351.

9. Morchella esculenta (L.) Pers.: Beyören village, among leaf litter, under *Quercus* sp., 37°48'N-33°52'E, 1490 m, 30.04.2019, FTÇ-419.

Verpa Sw.

10. Verpa bohemica (Krombh.) J. Schröt.: Yıldızlı village, among leaf litter, under *Populus* and *Salix* spp., 37°26'N-34°09'E, 1130 m, 17.04.2017, FTÇ-4.

Pezizaceae Dumort.

Peziza Dill. ex Fr.

11. Peziza succosa Berk.: Melicek village, on soil, under *Populus* sp., 37°28'N-33°58'E, 1050 m, 09.06.2017, FTÇ-45.

Sarcosphaera Auersw.

12. Sarcosphaera coronaria (Jacq.) J. Schröt.: Gaybi village, among needle litter under *Pinus* sp., 37°25'N-34°08'E, 1180 m, 02.05.2018, FTÇ-366.

Terfezia (Tul. & C. Tul.) Tul. & C. Tul.

13. Terfezia claveryi Chatin: Alhan village, in soil, among *Helianthemum* sp. 37°30'N-33°57'E, 1010 m, 15.04.2018, FTÇ-359; Melicek village, steppe, in soil with



Helianthemum sp., 37°26'N-33°58'E, 1150 m, 27.04.2019, FTÇ-415.

Pyronemataceae Corda

Geopora Harkn.

14. *Geopora sumneriana* (Cooke) M. Torre: Gaybi village, among needle litter, under *Pinus* sp., embedded in the ground, 37°25'N-34°07'E, 1250 m, 30.04.2017, FTÇ-24.

Geopyxis (Pers.) Sacc.

15. *Geopyxis vulcanalis* (Peck) Sacc.: Gaybi village, on soil, among leaf litter, streamside, 37°25'N-34°08'E, 1225 m, 31.03.2018, FTÇ-355; Büyükdede village, streamside, under *Salix* sp. and *Populus* sp., 37°25'N-34°07'E, 1350 m, 17.04.2019, FTÇ-409.

Humaria Fuckel

16. *Humaria hemisphaerica* (F.H. Wigg.) Fuckel: Belceağaç village, on sandy soil, streamside, 37°28'N-34°06'E, 1060 m, 26.08.2017, FTÇ-136.

Inermisia Rifai

17. *Inermisia gyalectoides* (Svrček & Kubička) Dennis & Itzerott: Sarıca village, among moss, 37°27'N-34°07'E, 1110 m, 10.12.2017, FTÇ-262.

Octospora Hedw.

18. *Octospora itzerottii* Benkert: Sarıca village, on moss, 37°28'N-34°07'E, 1060 m, 09.12.2017, FTÇ-235.

Otidea (Pers.) Bonord.

19. *Otidea alutacea* (Pers.) Masee: Gaybi village, among needle litter under *Pinus* sp. 37°25'N-34°08'E, 1160 m, 02.06.2018, FTÇ-381.

Parascutellinia Svrček

20. *Parascutellinia violacea* (Velen.) Svrček: Sarıca village, on soil, streamside, 37°28'N-34°07'E, 1060 m, 06.11.2017, FTÇ-202.

Picoa Vittad.

21. *Picoa juniperi* Vittad.: Yellice village, steppe, in soil, 37°24'N-34°01'E, 1650 m, 13.04.2019, FTÇ-407.

22. *Picoa lefebvrei* (Pat.) Maire: Melicek village, steppe, in soil, 37°26'N-33°58'E, 1150 m, 24.04.2019, FTÇ-412.

Pyronema Carus

23. *Pyronema omphalodes* (Bull.) Fuckel: Büyükdede village, on ash remains under *Salix* sp., 37°25'N-34°07'E, 1300 m, 17.06.2017, FTÇ-57.

Scutellinia (Cooke) Lambotte

24. *Scutellinia crinita* (Bull.) Lambotte: Büyükdede village, on soil along streamside, 37°25'N-34°07'E, 1300 m, 17.06.2017, FTÇ-59.

25. *Scutellinia scutellata* (L.) Lambotte: Büyükdede village, on soil along streamside, 37°25'N-34°07'E, 1300 m, 17.06.2017, FTÇ-85.

Trichophaea Boud.

26. *Trichophaea woolhopeia* (Cooke & W. Phillips) Boud.: Gaybi village, among needle litter under *Pinus* sp., 37°25'N-34°08'E, 1170 m, 02.06.2018, FTÇ-382.

Tuberaceae Dumort.

Tuber P. Micheli ex F.H. Wigg.

27. *Tuber borchii* Vittad.: Beyören village, in soil under *Quercus* sp., 37°48'N-33°52'E, 1490 m, 30.06.2017, FTÇ-92; 23.07.2017, FTÇ-106; 29.07.2017, FTÇ-122.

Sordariomycetes O.E. Erikss. & Winka

Diaporthales Nannf.

Valsaceae Tul. Ve C. Tul.

Valsa Fr.

28. *Valsa sordida* Nitschke: Sarıca village, on alive *Populus* sp. barks, 37°27'N-34°07'E, 1090 m, 30.04.2017, FTÇ-19.

Xylariales Nannf.

Xylariaceae Tul. & C. Tul.

Xylaria Hill ex Schrank

29. *Xylaria hypoxylon* (L.) Grev.: Büyükdede village, on decaying stump, 37°25'E-34°07'E, 1300 m, 03.06.2017, FTÇ-36; Yıldızlı village, on dead branches of *Corylus* L. sp., 37°27'N-34°08'E, 1110 m, 12.07.2017, FTÇ-102.

Basidiomycota R.T. Moore

Agaricomycetes Doweld

Agaricales Underw.

Agaricaceae Chevall.

Agaricus L.

30. *Agaricus bisporus* (J.E. Lange) Imbach: Sarıca village, among grasses along streamside, 37°27'N-34°07'E, 1090 m, 30.04.2017, FTÇ-18.

31. *Agaricus xanthodermus* Genev.: Büyükdede village, on soil, among grasses under *Prunus* sp., 37°25'N-34°07'E, 1350 m, 01.06.2018, FTÇ-376.

Bovista Pers.

32. *Bovista plumbea* Pers.: Alhan village, on soil, among grass, 37°30'N-33°57'E, 1030 m, 28.08.2017, FTÇ-142.

Calvatia Fr.

33. *Calvatia gigantea* (Batsch) Lloyd: Melicek village, on soil, among grass, 37°26'N-33°58'E, 1150 m, 14.06.2018, FTÇ-402.

Coprinus Pers.

34. *Coprinus comatus* (O.F. Müll.) Pers.: Sarıca village, on soil among grass, 37°27'N-34°07'E, 1100 m, 17.06.2017, FTÇ-53.

Montagnea Fr.

35. *Montagnea arenaria* (DC.) Zeller: Melicek village, on soil among grass, 37°26'N-33°58'E, 1150 m, 27.04.2019, FTÇ-416.

**Tulostoma** Pers.

36. *Tulostoma brumale* Pers.: Gaybi village, on soil among moss in mixed forest, 37°25'N-34°08'E, 1190 m, 06.01.2018, FTÇ-307.

37. *Tulostoma fimbriatum* Fr.: Büyükdede village, on soil under *Pinus* sp., 37°25'N-34°07'E, 1400 m, 17.04.2017, FTÇ-11; 37°25'N-34°08'E, 1190 m, 09.12.2017, FTÇ-243.

38.Tulostoma niveum*** Kers: Melicek village, among moss in grassland, 37°26'N-33°58'E, 1150 m, 29.04.2019, FTÇ-418.

Suggested Turkish Name: İbikligözenek

Gasterocarp, stipitate, 4-8 mm in diameter, subglobose to ovoid, strictly papillate at the top with a single ostiole, white to whitish cream, somewhat flattened at the base with a slight collar around the stipe apex. Stipe 6-15 x 1-3 mm, slender, some tapered towards the base, whitish, smooth to striate, deeply immersed in moss. Capillitial hyphae 2-6 µm in diameter, septate. Basidiospores 5.5-8 µm, globose to subglobose, coarsely verruculose, some of the verruculae irregular and somewhat isolated (Fig. 2).

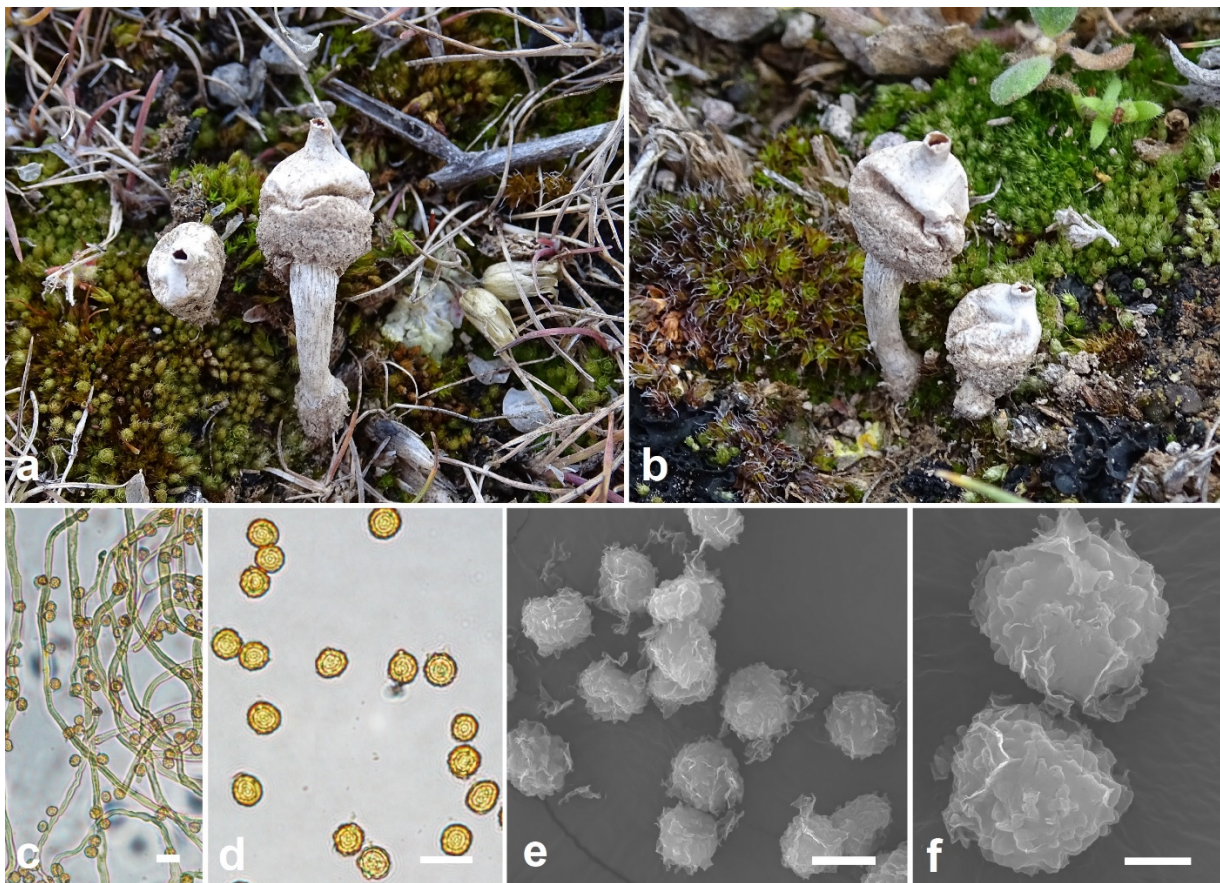


Figure 2. Gasterocarps (a,b), capillitial hyphae (c), light microscope (d) and SEM images (e,f) of basidiospores of *Tulostoma niveum* (bars: c,d: 10 µm, e: 5 µm, f: 2 µm) (c,d in Melzer)

Bolbitiaceae Singer**Conocybe** Fayod

39. *Conocybe apala* (Fr.) Arnolds: Ereğli Kültür Park, on soil among grass, 37°32'N-34°04'E, 1050 m, 02.05.2019, FTÇ-421.

Chromocyphellaceae Knudsen**Chromocyphella** De Toni & Levi

40. *Chromocyphella muscicola* (Fr.) Donk: Sarıca village, picnic area, on moss along streamside, 37°28'N-34°07'E, 1060 m, 10.12.2017, FTÇ-246.

Cyphellaceae Lotsy**Chondrostereum** Pouzar

41. *Chondrostereum purpureum* (Pers.) Pouzar: Melicek village, on *Populus* sp. stump, 37°28'N-33°58'E, 1020 m, 12.07.2017, FTÇ-104; Sarıca village, on *Populus* sp. stump, 37°28'N-34°07'E, 1060 m, 09.12.2017, FTÇ-239.

**Hymenogastraceae** Vittad.**Galerina** Earle

42. *Galerina pumila* (Pers.) Singer: Yellice village, on moss, under *Juniperus* sp., 37°24'N-34°01'E, 1500 m, 06.01.2018, FTÇ-297; 06.01.2018, FTÇ-303.

Hymenogaster Vittad.

43. *Hymenogaster bulliardii* Vittad.: Gaybi village, in soil, under *Crataegus* sp., 37°25'N-34°08'E, 1250 m, 17.06.2017, FTÇ-75.

Psilocybe (Fr.) P. Kumm.

44. *Psilocybe coronilla* (Bull.) Noordel.: Sarıca village, around İvriz Anatolian High School, on manured soil, 37°27'N-34°07'E, 1110 m, 17.04.2017, FTÇ-8.

Inocybaceae Jülich**Inocybe** (Fr.) Fr.

45. *Inocybe rimosa* (Bull.) P. Kumm.: Melicek village, among leaf litter, under *Populus* sp., 37°28'N-33°58'E, 1050 m, 17.06.2017, FTÇ-87.

Phaeomarasmium Scherff.

46. *Phaeomarasmium erinaceus* (Fr.) Scherff. ex Romagn.: Büyükdede village, on decaying *Salix* sp. stump, along streamside, 37°25'N-34°07'E, 1350 m, 06.01.2018, FTÇ-316.

Marasmiaceae Roze ex Kühner**Calyptella** Quél.

47. *Calyptella capula* (Holmsk.) Quél.: Sarıca village, on petioles of dead *Sambucus* L. sp. leaves, 37°27'N-34°07'E, 1110 m, 06.11.2017, FTÇ-200.

Mycenaceae Overeem**Hemimycena** Singer

48. *Hemimycena lactea* (Pers.) Singer: Sarıca village, around İvriz Anatolian High School, among needle litter, 37°26'N-34°07'E, 1100 m, 10.12.2017, FTÇ-245.

Mycena (Pers.) Roussel

49. *Mycena haematopus* (Pers.) P. Kumm.: Gaybi village, on decaying wood in pine forest, 37°25'N-34°08'E, 1240 m, 30.12.2017, FTÇ-282.

50. *Mycena meliigena* (Berk. & Cooke) Sacc.: Sarıca village, on decaying bark in pine forest, 37°27'N-34°07'E, 1100 m, 10.12.2017, FTÇ-257.

Omphalotaceae Bresinsky**Gymnopus** (Pers.) Gray

51. *Gymnopus dryophilus* (Bull.) Murrill: Sarıca village, around İvriz Anatolian High School, among needle litter, 37°26'N-34°07'E, 1100 m, 10.12.2017, FTÇ-259.

Physalacriaceae Corner**Flammulina** P. Karst.

52. *Flammulina velutipes* (Curtis) Singer: Büyükdede village, around *Salix* sp. stump, 37°25'N-34°07'E, 1350 m, 30.12.2017, FTÇ-285; 30.12.2017, FTÇ-288.

Pleurotaceae Kühner**Pleurotus** (Fr.) P. Kumm.

53. *Pleurotus eryngii* (DC.) Quél.: Yellice village, on soil with *Ferula* sp. remains, 37°25'N-34°06'E, 1330 m, 17.04.2017, FTÇ-7; Melicek village, 37°26'N-33°58'E, 1200 m, 10.01.2018, FTÇ-327.

54. *Pleurotus ostreatus* (Jacq.) P. Kumm.: Sarıca village picnic area, on *Populus* sp. stump, 37°28'N-34°07'E, 1060 m, 09.12.2017, FTÇ-242; Büyükdede village, 37°25'N-34°07'E, 1350 m, 30.12.2017, FTÇ-287.

Pluteaceae Kotl. & Pouzar**Pluteus** Fr.

55. *Pluteus romellii* (Britzelm.) Sacc.: Melicek village, kavaklık, around decaying *Populus* sp. stump, 37°28'N-33°58'E, 1050 m, 09.06.2017, FTÇ-49; Belceağaç village, 37°28'N-34°06'E, 1080 m, 17.06.2017, FTÇ-81.

Volvariella Speg.

56. *Volvariella bombycina* (Schaeff.) Singer: Yıldızlı village, on decaying *Populus* sp. stump, 37°27'N-34°08'E, 1120 m, 17.06.2017, FTÇ-63; Sarıca village, 37°27'N-34°07'E, 1100 m, 23.08.2017, FTÇ-133; Melicek village, 37°28'N-33°58'E, 1050 m, 29.10.2017, FTÇ-184.

57. *Volvariella murinella* (Quél.) M.M. Moser ex Dennis, P.D. Orton & Hora: Beyören village, on soil under *Quercus* sp., 37°48'N-33°52'E, 1490 m, 13.05.2018, FTÇ-371.

Psathyrellaceae Vilgalys, Moncalvo & Redhead**Coprinellus** P. Karst.

58. *Coprinellus disseminatus* (Pers.) J.E. Lange: Yıldızlı village, around decaying *Salix* sp. stump, 37°27'N-34°08'E, 1100 m, 17.06.2017, FTÇ-60; Belceağaç village, 37°28'N-34°06'E, 1060 m, 02.08.2017, FTÇ-123.

59. *Coprinellus micaceus* (Bull.) Vilgalys, Hopple & Jacq. Johnson: Gaybi village, on decaying *Populus* sp. stump, 37°25'N-34°08'E, 1250 m, 23.04.2017, FTÇ-13; Yıldızlı village, 37°26'N-34°08'E, 1150 m, 26.05.2017, FTÇ-27; Melicek village, 37°28'N-33°58'E, 1050 m, 03.06.2017, FTÇ-28; Büyükdede village, 37°24'N-34°07'E, 1350 m, 17.06.2017, FTÇ-76; Sarıca village, 37°27'N-34°08'E, 1100 m, 05.06.2018, FTÇ-396.

Coprinopsis P. Karst.

60. *Coprinopsis atramentaria* (Bull.) Redhead, Vilgalys & Moncalvo: Büyükdede village, along streamside, around decaying *Populus* sp. stump, 37°25'N-34°07'E,



1300 m, 09.06.2017, FTÇ-48; Yıldızlı village, 37°27'N-34°08'E, 1100 m, 17.06.2017, FTÇ-67; Belceağaç village, 37°28'N-34°06'E, 1060 m, 30.10.2017, FTÇ-186.

Parasola Redhead, Vilgalys & Hopple

61. Parasola auricoma (Pat.) Redhead, Vilgalys & Hopple: Yıldızlı village, on soil among grass, under *Populus* sp., 37°26'N-34°09'E, 1130 m, 17.04.2017, FTÇ-6.

Psathyrella (Fr.) Quél.

62. Psathyrella candolleana (Fr.) Maire: Ereğli Kültür Park, around decaying stump, 37°32'N-34°04'E, 1050 m, 28.04.2018, FTÇ-361.

Schizophyllaceae Quél.

Schizophyllum Fr.

63. Schizophyllum amplum (Lév.) Nakasone: Sarıca village picnic area, on decaying *Populus* sp. stump, 37°28'N-34°07'E, 1060 m, 09.12.2017, FTÇ-241.

Strophariaceae Singer & A.H. Sm.

Agrocybe Fayod

64. Agrocybe pediades (Fr.) Fayod: Melicek village, on soil among grass, 37°26'N-33°58'E, 1150 m, 29.04.2019, FTÇ-417.

Pholiota (Fr.) P. Kumm.

65. Pholiota populnea (Pers.) Kuyper & Tjall.-Beuk.: Yıldızlı village, on *Salix* sp. stump, 37°27'N-34°08'E, 1110 m, 30.10.2017, FTÇ-187; Sarıca village, picnic area, 37°28'N-34°07'E, 1060 m, 06.11.2017, FTÇ-203; 11.11.2017, FTÇ-217.

Tricholomataceae R. Heim ex Pouzar

Myxomphalia Hora

66. Myxomphalia maura (Fr.) Hora: Yellice village, on soil among grass, 37°24'N-34°01'E, 1600 m, 06.01.2018, FTÇ-309.

Tricholoma (Fr.) Staude

67. Tricholoma fracticum (Britzelm.) Kreisel: Gaybi village, among needle litter, under *Pinus* sp., 37°25'N-34°08'E, 1160 m, 21.05.2018, FTÇ-374.

Tubariaceae Vizzini

Cyclocybe Velen.

68. Cyclocybe cylindracea (DC.) Vizzini & Angelini: Melicek village, on *Populus* sp. stump, 37°28'N-33°58'E, 1050 m, 09.06.2017, FTÇ-47; Yıldızlı village, 37°27'N-34°08'E, 1100 m, 17.06.2017, FTÇ-70; Belceağaç village, 37°28'N-34°06'E, 1080 m, 17.06.2017, FTÇ-88; Ereğli Kültür Park area, 37°31'N-34°03'E, 1050 m, 29.07.2017, FTÇ-121; Burhaniye village, 37°28'N-33°59'E, 1040 m, 30.10.2017, FTÇ-191.

Boletales E.-J. Gilbert

Diplocystidiaceae Kreisel

Astraeus Morgan

69. Astraeus hygrometricus (Pers.) Morgan: Gaybi village, on soil among leaf litter, 37°25'N-34°08'E, 1225 m, 20.11.2017, FTÇ-225; 06.01.2018, FTÇ-301; Büyükdede village, 37°24'N-34°07'E, 1360 m, 09.06.2018, FTÇ-400.

Gomphidiaceae Maire ex Jülich

Chroogomphus (Singer) O.K. Mill.

70. Chroogomphus rutilus (Schaeff.) O.K. Mill.: Gaybi village, among needle litter, under *Pinus* sp., 37°25'N-34°08'E, 1250 m, 30.06.2017, FTÇ-96; 01.10.2017, FTÇ-161; 06.10.2017, FTÇ-163; 08.11.2017, FTÇ-212; 02.06.2018, FTÇ-394; Ereğli Kültür Park, 37°31'N-34°03'E, 1050 m, 02.06.2018, FTÇ-379.

Paxillaceae Lotsy

Melanogaster Corda

71. Melanogaster broomeanus Berk.: Beyören village, in soil, under *Quercus* sp., 37°48'N-33°52'E, 1480 m, 27.06.2017, FTÇ-90; Beyören village, 37°48'N-33°52'E, 1490 m, 23.07.2017, FTÇ-105; Gaybi village, in soil, under *Pinus* and *Cedrus* spp., 37°25'N-34°08'E, 1220 m, 06.11.2017, FTÇ-209; 21.06.2018, FTÇ-404.

Rhizopogonaceae Gäum. & C.W. Dodge

Rhizopogon Fr.

72. Rhizopogon roseolus (Corda) Th. Fr.: Yıldızlı village, in soil, among needle litter, 37°26'N-34°08'E, 1200 m, 23.06.2017, FTÇ-89; Gaybi village, 37°25'N-34°08'E, 1250 m, 30.06.2017, FTÇ-95; Büyükdede village, 37°25'N-34°08'E, 1350 m, 26.07.2017, FTÇ-115; 08.08.2017, FTÇ-128; Sarıca village, around İvriz Anatolian High School, 37°26'N-34°07'E, 1220 m, 21.08.2017, FTÇ-132; 01.10.2017, FTÇ-160; Sarıca village, 37°27'N-34°07'E, 1120 m, 23.12.2017, FTÇ-269; Ereğli Kültür Park, 37°25'N-34°08'E, 1050 m, 24.04.2018, FTÇ-360; 02.06.2018, FTÇ-378.

Sclerodermataceae Corda

Pisolithus Alb. & Schwein.

73. Pisolithus arhizus (Scop.) Rauschert: Çimencik village, on soil, roadside, around *Pinus* sp., 37°28'N-34°00'E, 1060 m, 06.11.2017, FTÇ-211; Sarıca village, picnic area, around *Pinus* sp., 37°27'N-34°07'E, 1100 m, 19.11.2017, FTÇ-224.

Scleroderma Pers.

74. Scleroderma cepa Pers.: Melicek village, on soil, under *Populus* sp., 37°28'N-33°58'E, 1050 m, 25.07.2017, FTÇ-107; Sarıca village, 37°27'N-34°07'E, 1100 m, 28.08.2017, FTÇ-143.

**Suillaceae** Besl & Bresinsky**Suillus** Gray

75. *Suillus collinitus* (Fr.) Kuntze: Büyükdede village, among needle litter, under *Pinus* sp., 37°25'N-34°08'E, 1380 m, 30.06.2017, FTÇ-97; Gaybi village, 37°25'N-34°08'E, 1225 m, 08.11.2017, FTÇ-214; 10.12.2017, FTÇ-254; 02.05.2018, FTÇ-362.

Geastrales K. Hosaka & Castellano**Geastraceae** Corda**Geastrum** Pers.

76. *Geastrum fimbriatum* Fr.: Sarıca village, around İvriz Anatolian High School, on soil, among needle litter, 37°26'N-34°07'E, 1100 m, 10.12.2017, FTÇ-255.

77. *Geastrum minimum* Schwein.: Beyören village, on soil, under *Quercus* sp., 37°48'N-33°52'E, 1490 m, 06.01.2018, FTÇ-310.

Schenella T. Macbr.

78. *Schenella pityophila* (Malençon & Rioussset) Estrada & Lado: Sarıca village, under decaying needle litter, 37°27'N-34°07'E, 1100 m, 26.12.2017, FTÇ-270; Gaybi village, 37°25'N-34°08'E, 1235 m, 30.12.2017, FTÇ-274; 02.06.2018, FTÇ-387.

Hymenochaetales Oberw.**Hymenochaetaceae** Donk**Phellinus** Quél.

79. *Phellinus igniarius* (L.) Quél.: Sarıca village, on *Salix* sp. stump, 37°28'N-34°07'E, 1090 m, 03.06.2017, FTÇ-30; Yıldızlı village, 37°27'N-34°08'E, 1120 m, 17.06.2017, FTÇ-69; Alhan village, 37°30'N-33°59'E, 1020 m, 02.08.2017, FTÇ-127; Belceağaç village, 37°28'N-34°06'E, 1060 m, 06.11.2017, FTÇ-198.

Polyporales Gäum.**Fomitopsidaceae** Jülich**Fomes** (Fr.) Fr.

80. *Fomes fomentarius* (L.) Fr.: Belceağaç village, on *Populus* sp. stump, 37°28'N-34°06'E, 1100 m, 29.10.2017, FTÇ-183.

Laetiporaceae Jülich**Laetiporus** Murrill

81. *Laetiporus sulphureus* (Bull.) Murrill: Sarıca village picnic area, on *Salix* sp. stump, 37°27'N-34°07'E, 1100 m, 06.11.2017, FTÇ-199; 02.06.2018, FTÇ-380.

Polyporaceae Fr. ex Corda**Lentinus** Fr.

82. *Lentinus tigrinus* (Bull.) Fr.: Melicek village, around decaying *Populus* sp. stump, 37°28'N-33°58'E, 1050 m, 09.06.2017, FTÇ-51.

Polyporus P. Micheli ex Adans.

83. *Polyporus tuberaster* (Jacq. ex Pers.) Fr.: Sarıca village, around İvriz Anatolian High School, on decaying wood, 37°27'N-34°07'E, 1110 m, 17.04.2017, FTÇ-10.

Trametes Fr.

84. *Trametes trogii* Berk.: Melicek village, on decaying *Populus* sp. stump, 37°28'N-33°58'E, 1050 m, 03.06.2017, FTÇ-29.

Russulales Kreisel ex P.M. Kirk, P.F. Cannon & J.C. David**Auriscalpiaceae** Maas Geest.**Artomyces** Jülich

85. *Artomyces pyxidatus* (Pers.) Jülich: Gaybi village, on pine needles, 37°25'N-34°08'E, 1200 m, 30.12.2017, FTÇ-294.

Stereaceae Pilát**Stereum** Hill ex Pers.

86. *Stereum hirsutum* (Willd.) Pers.: Yıldızlı village, on wood remnants under *Populus* and *Corylus* spp., 37°26'N-34°09'E, 1110 m, 17.04.2017, FTÇ-3; 12.07.2017, FTÇ-103.

Dacrymycetes Doweld**Dacrymycetales** Henn.**Dacrymycetaceae** J. Schröt.**Dacrymyces** Nees

87. *Dacrymyces stillatus* Nees: Sarıca village, on decaying wood under *Pinus* sp., 37°27'N-34°07'E, 1100 m, 10.12.2017, FTÇ-252.

Pucciniomycetes R. Bauer, Begerow, J.P. Samp., M. Weiss & Oberw.**Pucciniales** Caruel**Pucciniaceae** Chevall.**Gymnosporangium** R. Hedw. ex DC.

88. *Gymnosporangium clavariiforme* (Wulfen) DC.: Yellice village, on *Juniperus* sp. branches, 37°24'N-34°01'E, 1600 m, 31.03.2018, FTÇ-354.

Tremellomycetes Doweld**Tremellales** Fr.**Tremellaceae** Fr.**Tremella** Pers.

89. *Tremella mesenterica* Retz.: Gaybi village, on decaying wood under *Pinus* sp., 37°25'N-34°08'E, 1230 m, 30.12.2017, FTÇ-272.

Discussions

A list of 89 macromycete taxa were presented from Ereğli district of Konya. Twenty nine of them (26 *Pezizales*, 1 *Diaporthales*, 1 *Patellariales*, 1 *Xylariales*) belong to *Ascomycota* and 60 of them (39 *Agaricales*, 7



Boletales, 5 *Polyporales*, 3 *Geastrales*, 2 *Russulales*, 1 *Diaporales*, 1 *Hymenochaetales*, 1 *Pucciniales*, 1 *Tremellales*) belong to *Basidiomycota*.

Pyronemataceae was found to be the most crowded family in the region with 13 species. *Agaricaceae*, *Helvellaceae* and *Psathyrellaceae* followed the *Pyronemataceae* with 9, 6 and 5 taxa respectively. Seven of the families (*Geastraceae*, *Hymenogastraceae*, *Morchellaceae*, *Mycenaceae*, *Pezizaceae*, *Pluteaceae*, *Polyporaceae*) are resembled with 3 taxa, 5 of them (*Inocybaceae*, *Pleurotaceae*, *Pezizaceae*, *Sclerodermataceae*, *Strophariaceae*, *Tricholomataceae*) are resembled with 2 taxa, while the rest of the 25 families are resembled with only one taxon in the region.

Helvella L. was found to be the most crowded genus in the research area with 5 taxa. *Tulostoma* is the second crowded one with 3 taxa. Nine genera (*Agaricus*, *Coprinellus*, *Geastrum*, *Morchella*, *Mycena*, *Picoa*, *Pleurotus*, *Scutellinia*, *Volvariella*) are resembled with 2 taxa while the rest of the 62 genera are resembled with only one taxon in the research area.

According to literature 27 of the determined taxa are edible, 58 are inedible and 5 are more or less poisonous. Among the edible taxa, only *Pleurotus ostreatus*, *Terfezia clavaryi*, *Morchella elata* and *Morchella esculenta*, are collected and consumed by locals with the local Turkish names “kavak mantarı”, “domalan/keme” and “kuzu göbeği” respectively. *Morchella elata*, *M. esculenta* and *T. clavaryi* also have commercial value in the region. They are collected and sold during especially May and June. *Agaricus*

xanthodermus, *Coprinopsis atramentaria*, *Helvella lacunosa*, *Inocybe rimosa* and *Sarcosphaera coronaria* are the poisonous species determined in the region.

Eight of the determined taxa (*Coprinellus micaceus*, *Coprinopsis atramentaria*, *Cyclocybe cylindracea*, *Fomes fomentarius*, *Phellinus igniarius*, *Pholiota populnea*, *Pleurotus eryngii*, *P. ostreatus*) were also presented by Kaşık and Öztürk (1998) from the region before. The rest of the taxa (81 species) are reported for the first time from the region. Among the determined taxa *Tulostoma niveum* was presented from Turkey for the first time (Sesli et al., 2020).

Together with the macrofungi taxa previously reported by Kaşık and Öztürk (1998) (*Agaricus bitorquis* (Quél.) Sacc., *Fomes* (Fr.) Fr. sp., *Grifola frondosa* (Dicks.) Gray, *Marasmius oreades* (Bolton) Fr., *Mycena* (Pers.) Roussel sp., *Mycena* sp., *Mycena epipterygia* (Scop.) Gray, *Mycena pura* (Pers.) P. Kumm., *Panaeolus rickenii* Hora, *Pholiota adiposa* (Batsch) P. Kumm., *Protostropharia semiglobata* (Batsch) Redhead, Moncalvo & Vilgalys, *Trametes versicolor* (L.) Lloyd, *Tricholoma inocyboides* Corner, *Vitreoporus dichrous* (Fr.) Zmitr.) and Uzun (2021) (*Trichoglossum walteri* (Berk.) E.J. Durand) the determined macrofungi taxa number within the boundaries of Ereğli district increased to 104.

The determined taxa were also compared with the studies carried out in close environs and some similarities were observed. These studies and the similarity percentages are given in Table 1. The reason for this similarity may be the common climate and vegetation.

Table 2. Similarity percentages of neighbouring studies with Ereğli and its close environs

	# of Identical taxa	Total taxa	Similarity (%)
Kaşık et al. (2001)	11	32	34.36
Aktaş et al. (2003)	19	74	29.03
Doğan and Öztürk (2006)	26	202	12.87
Doğan et al. (2007)	22	95	23.16
Türkoğlu et al. (2007)	9	31	29.03
Alkan et al., (2010)	20	134	14.92
İleri et al. (2020)	33	84	39.29
Çetinkaya et al. (2021)	36	74	48.64



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